

RCD/MCB combination switch, 10A, 100mA, miniature circuit-br. type D trip characteristic, 1-phase+N, residual current circuit-br. trip characteristic: A



Part no. FRBDM-D10/1N/01-G/A Article no. 168289

Catalog No. PDC-TBD6521

Similar to illustration

**Delivery program** 

Delivery program			
Basic function			Combined RCD/MCB devices
Number of poles			1 pole+N
Tripping characteristic			D
Application			Switchgear for industrial and advanced commercial applications
Rated current	In	Α	10
Rated switching capacity according to IEC/EN 61009		kA	10
Rated fault current	$I_{\Delta N}$	Α	0.1
Tripping		Α	Short time-delayed
Product range			FRBdM
Sensitivity			Pulse-current sensitive
Impulse withstand current			Surge-proof, 3 kA
Contact sequence			

### **Technical data**

#### **Electrical**

Sensitivity			Pulse-current sensitive
Rated current	$I_n$	Α	10
Tripping characteristic			D

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	10
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Equipment heat dissipation, current-dependent	$P_{\text{vid}}$	W	3.2
Static heat dissipation, non-current-dependent	$P_{vs}$	W	0
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
			0
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.

10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9 Insulation properties	
10.9.2 Power-frequency electric strength	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material	Is the panel builder's responsibility.
10.10 Temperature rise	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

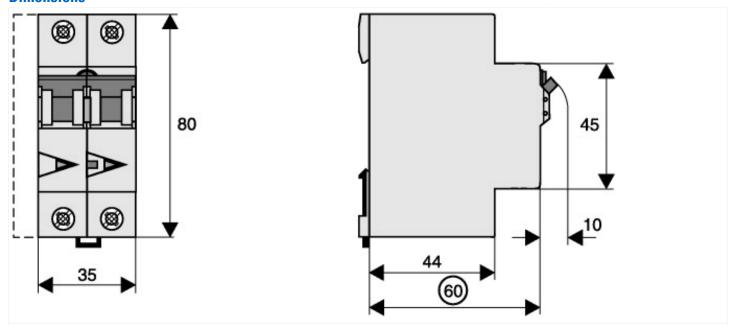
### **Technical data ETIM 6.0**

Circuit breakers and fuses (EG000020) / Earth leakage circuit breaker (EC000905)

Electric engineering, automation, process control engineering / Electrical installation, device / Residual current protection system / MCB/RCCB combination (ecl@ss8.1-27-14-22-07 [AFZ810012])

Number of protected poles         I         1           Nominal rated voltage         V         240           Nominal rated current         A         10           Rated fault current         A         0.1           Leakage current type         A         3           Current limiting class         KA         10           Rated short-circuit breaking capacity EC 60947-2         KA         10           Frequency         SO Hz         50 Hz           Release characteristic         D         Vers           Concurrently switching N-neutral         Yes         3           Over voltage category         Yes         3           Pollution degree         2         2           Width in number of modular spacings         2         2           Built-in depth         No         No           Suitable for flush-mounted installation         No         No           Degree of protection (IP)         IP20           Surge current capacity         A         3           Voltage type         AC         AC			
Nominal rated voltage         V         240           Nominal rated current         A         10           Rated fault current         A         0.1           Leakage current type         A         0.3           Current limiting class         A         10           Rated short-circuit breaking capacity EN 60898         KA         10           Rated short-circuit breaking capacity IEC 60947-2         KA         0           Frequency         50 Hz         D           Release characteristic         D         Ves           Concurrently switching N-neutral         Yes         3           Over voltage category         3         3           Pollution degree         2         2           Width in number of modular spacings         mm         70           Suitable for flush-mounted installation         mm         70           Suitable for flush-mounted installation         No         1P20           Surge current capacity         KA         3           Voltage type         Constant a suitable for flush-mounted installation         KA         3	Number of poles (total)		2
Nominal rated current Rated fault current Leakage current type Leakage current type Rated short-circuit breaking capacity EN 60898 Rated short-circuit breaking capacity EN 608988 Rated short-circuit breaking capacity EN 60898 Rated short-circuit breaking capac	Number of protected poles		1
Rated fault current Leakage current type Current limiting class Rated short-circuit breaking capacity EN 60898 Rated short-circuit breaking capacity IEC 60947-2 Release characteristic Concurrently switching N-neutral Over voltage category Pollution degree Width in number of modular spacings Built-in depth Suitable for flush-mounted installation Degree of protection (IP) Surge current capacity Voltage type  A  A  A  A  A  A  A  A  A  A  A  A  D  A  D  CA  CA	Nominal rated voltage	V	240
Leakage current type Current limiting class Rated short-circuit breaking capacity EN 60898 Rated short-circuit breaking capacity IEC 60947-2 Release characteristic Concurrently switching N-neutral Over voltage category Pollution degree Width in number of modular spacings Built-in depth Suitable for flush-mounted installation Degree of protection (IP) Surge current capacity Ves Releakage current capacity A A  10  CA  PA  PA  PA  PA  PA  PA  PA  PA  PA	Nominal rated current	А	10
Current limiting class Rated short-circuit breaking capacity EN 60898 Rated short-circuit breaking capacity IEC 60947-2 Release characteristic Concurrently switching N-neutral Over voltage category Pollution degree Width in number of modular spacings Built-in depth Suitable for flush-mounted installation Degree of protection (IP) Surge current capacity Voltage type  VA  VA  VA  VA  VA  D  CONCURRENT I I I I I I I I I I I I I I I I I I I	Rated fault current	А	0.1
Rated short-circuit breaking capacity EN 60898 Rated short-circuit breaking capacity IEC 60947-2  Release characteristic Concurrently switching N-neutral Over voltage category Pollution degree Width in number of modular spacings Built-in depth Suitable for flush-mounted installation Degree of protection (IP) Surge current capacity Ves  No Voltage type  KA  0  0  0  0  0  0  0  0  0  0  0  0  0	Leakage current type		A
Rated short-circuit breaking capacity IEC 60947-2  Frequency  Release characteristic  Concurrently switching N-neutral  Over voltage category  Pollution degree  Width in number of modular spacings  Built-in depth  Suitable for flush-mounted installation  Degree of protection (IP)  Surge current capacity  Voltage type  KA  D  SUITA  SUITA  SUITA  SUITA  KA  D  SUITA  SUIT	Current limiting class		3
Frequency Release characteristic Concurrently switching N-neutral Over voltage category Pollution degree Width in number of modular spacings Built-in depth Suitable for flush-mounted installation Degree of protection (IP) Surge current capacity Voltage type  \$ 0 Hz  \$ 0 Hz  \$ 0 Hz  \$ 0 Hz  \$ 1 Hz  \$ 1 Hz  \$ 2 Hz  \$ 2 Hz  \$ 2 Hz  \$ 3 Hz  \$ 3 Hz  \$ 4 Hz  \$ 5	Rated short-circuit breaking capacity EN 60898	kA	10
Release characteristic Concurrently switching N-neutral Over voltage category Pollution degree Width in number of modular spacings Built-in depth Suitable for flush-mounted installation Degree of protection (IP) Surge current capacity Voltage type  D  Yes  Yes  2  2  4  7  7  No  No  No  AC  AC	Rated short-circuit breaking capacity IEC 60947-2	kA	0
Concurrently switching N-neutral  Over voltage category  Pollution degree  Width in number of modular spacings  Built-in depth  Suitable for flush-mounted installation  Degree of protection (IP)  Surge current capacity  Ves  3  Yes  1  No  1  Pollution degree  Protection (IP)  IP20  AC	Frequency		50 Hz
Over voltage category Over voltage category  Suitable for flush-mounted installation Ougree of protection (IP) Surge current capacity  Voltage type  3  2  2  3  4  4  5  6  7  7  8  1  1  1  1  1  1  1  1  1  1  1  1	Release characteristic		D
Pollution degree 2 Width in number of modular spacings 2 Built-in depth 70 Suitable for flush-mounted installation No Degree of protection (IP) IP20 Surge current capacity kA 3 Voltage type AC	Concurrently switching N-neutral		Yes
Width in number of modular spacings 2 Built-in depth mm 70 Suitable for flush-mounted installation No Degree of protection (IP) IP20 Surge current capacity kA 3 Voltage type AC	Over voltage category		3
Built-in depth Suitable for flush-mounted installation Degree of protection (IP) Surge current capacity Voltage type  mm 70  No IP20  AC	Pollution degree		2
Suitable for flush-mounted installation  Degree of protection (IP)  Surge current capacity  kA  3  Voltage type  AC	Width in number of modular spacings		2
Degree of protection (IP)  Surge current capacity  kA  3  Voltage type  AC	Built-in depth	mm	70
Surge current capacity kA 3 Voltage type AC	Suitable for flush-mounted installation		No
Voltage type AC	Degree of protection (IP)		IP20
	Surge current capacity	kA	3
	Voltage type		AC
Antinuisance tripping version Yes	Antinuisance tripping version		Yes

## **Dimensions**



# **Additional product information (links)**

Product overview (Web)

http://www.eaton.eu/Europe/Electrical/ProductsServices/CircuitProtection/DigitalCircuitBreakers/index.htm